

CLAIM AMENDMENTS:

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2/1/01  
1. (Previously Presented) An image pickup apparatus comprising:  
a plurality of unit cells arranged in an array, each unit cell including a plurality of photoelectric conversion portions and a common circuit for inputting signals from said plurality of photoelectric conversion portions and outputting the signals to the outside of said unit cell;  
a first addition portion for adding the signals from said plurality of photoelectric conversion portions at an input portion of said common circuit in said unit cell; and  
a second addition portion for adding the signals from a plurality of unit cells outside of said unit cell.

2. (Original) An apparatus according to claim 1, wherein said common circuit comprises amplification means for amplifying the signals from said plurality of photoelectric conversion portions and outputting the signals.

3. (Previously Presented) An apparatus according to claim 2, wherein said first addition portion adds the signals at an input portion of said amplification means.

4. (Previously Presented) An apparatus according to claim 1, wherein said second addition portion adds the signals using horizontal transfer means.

5. (Previously Presented) An apparatus according to claim 1, wherein said first addition portion adds the signals from said plurality of photoelectric conversion

portions arrayed in a horizontal direction, and said second addition portion adds the signals from said plurality of photoelectric conversion portions arrayed in a vertical or/and oblique directions.

6. (Original) An apparatus according to claim 1, further comprising read means for reading out signals from photoelectric conversion portions of two lines in a vertical direction by interlaced scanning.

7. (Currently Amended) An image pickup apparatus comprising:  
a plurality of unit cells arranged in an array, each unit cell including a plurality of photoelectric conversion portions and a common circuit for inputting signals from said plurality of photoelectric conversion portions and outputting the signals to the outside of said unit cell;

a common output line to which a plurality of signals from said plurality of unit cells are output sequentially; and

a control portion for effecting control so that the signals from a predetermined number (more than two) of photoelectric conversion portions for outputting signals of the same color are added outside of said unit cell and the added signals are output from said common output line;


~~wherein said control portion effects the control so that the signals from said plurality of photoelectric conversion portions included in said unit cell are not added in said unit cell.~~

8. (Original) An apparatus according to claim 7, wherein

said common circuit comprises amplification means for amplifying the signals from said plurality of photoelectric conversion portions and outputting the signals.

9. (Previously Presented) An apparatus according to claim 7, wherein said control portion adds the signals using horizontal transfer means.

10. (Original) An apparatus according to claim 7, further comprising read means for reading out signals from photoelectric conversion portions of two lines in a vertical direction by interlaced scanning.



11. (Original) An apparatus according to claim 7, further comprising a color filter arranged in said photoelectric conversion portions.

12. (Withdrawn) An apparatus according to claim 1, wherein said common circuit comprises amplification means for amplifying the signals from said plurality of photoelectric conversion portion in said unit cell and reset means for resetting said photoelectric conversion portions in said unit cell.

13. (Withdrawn) An apparatus according to claim 1, further comprising:  
image signal storage means for storing an image signal from said common circuit in said unit cell,  
variation signal storage means for storing a variation signal in characteristics of said common circuit to correct a variation in characteristics of said common circuit, and

differential means for subtracting a signal from said variation signal  
storage means from a signal from said image signal storage means.

14. (Withdrawn) An apparatus according to claim 1, further comprising:  
first storage means for storing a first signal from said common  
circuit in said unit cell,  
second storage means for storing a second signal from said common  
circuit; and  
differential means for differentiating a signal from said second  
storage means from a signal from said first storage means.

15. (Withdrawn) An apparatus according to claim 14, wherein said first  
signal is an image signal, and the second signal is a noise signal.

16. (Withdrawn) An apparatus according to claim 1, further comprising  
adjustment means for adjusting at least a pitch between said photoelectric conversion  
portions to an equal pitch in at least one of a vertical direction and a horizontal direction.


17. (Withdrawn) An apparatus according to claim 16, wherein  
said adjustment means comprises a light-shielding film.

18. (Withdrawn) An apparatus according to claim 1, wherein  
said common circuit is arranged at a central portion of said unit cell.

19. (Withdrawn) An apparatus according to claim 16, wherein said light-shielding film is arranged between unit cells which are adjacent to each other.

20. (Withdrawn) An apparatus according to claim 19, wherein said light-shielding film is arranged at a position line symmetric with respect to a central line of said unit cell in at least one of a horizontal direction and a vertical direction.

21.-31. (Cancelled)



32. (Withdrawn) An image pickup apparatus comprising:  
a plurality of unit cells arranged in an array, each unit cell including a plurality of photoelectric conversion portions and a common circuit for inputting signals from said plurality of photoelectric conversion portions and outputting the signals from said unit cell;

addition switching means for arbitrarily switching the signals from said photoelectric conversion portions, which are to be added in said cell; and

adjustment means for adjusting at least a pitch between said photoelectric conversion portions to an equal pitch in at least one of a vertical direction and a horizontal direction.

33. (Withdrawn) An image pickup apparatus comprising:  
a plurality of unit cells arranged in an array, each unit cell including a plurality of photoelectric conversion portions and a common circuit for inputting signals from said plurality of photoelectric conversion portions and outputting the signals from said unit cell;

addition switching means for arbitrarily switching the signals from said photoelectric conversion portions, which are to be added in said cell; and

adjustment means for adjusting at least a pitch between said photoelectric conversion portions to an equal pitch in at least one of a vertical direction and a horizontal direction,

wherein said adjustment means comprises a light-shielding film.

34. (Cancelled)

35. (Withdrawn) An image pickup apparatus comprising:

a plurality of unit cells arranged in an array, each unit cell including a plurality of photoelectric conversion portions and a common circuit for inputting signals from said plurality of photoelectric conversion portions and outputting the signals from said unit cell;

addition switching means for arbitrarily switching the signals from said photoelectric conversion portions, which are to be added in said cell, and

adjustment means for adjusting at least a pitch between said photoelectric conversion portions to an equal pitch in at least one vertical direction and a horizontal direction,

wherein said adjustment means comprises a light-shielding film and said light-shielding film is arranged between unit cells which are adjacent to each other.

36. (Withdrawn) An image pickup apparatus comprising:

a plurality of unit cells arranged in an array, each unit cell including a plurality of photoelectric conversion portions and a common circuit for inputting signals

from said plurality of photoelectric conversion portions and outputting the signals from said unit cell;

addition switching means for arbitrarily switching the signals from said photoelectric conversion portions, which are to be added in said cell; and

adjustment means for adjusting at least a pitch between said photoelectric conversion portions to an equal pitch in at least one of vertical direction and a horizontal direction,

wherein said adjustment means comprises a light-shielding film and said light-shielding film is arranged between unit cells which are adjacent to each other and at a position line symmetric with respect to a central line of said unit cell in at least one of a horizontal direction and a vertical direction.

37.-39. (Cancelled)

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